

Survey of medical facilities and patterns of medical care in licensed summer camps reveals a lack of official guidelines in planning for safe summer camping.

Health and Safety in Summer Camps

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THE INCREASING popularity of summer camping in rural areas presents potential community health problems. In many instances, the campsites have unsafe or inadequate water and sanitary facilities for large numbers of transient visitors. Arrangements in summer camps are usually rustic, in keeping with the short stay of campers and modest operating budgets.

Children and adults who populate summer camps have widely varying health needs, and generally they are unfamiliar with the environment and its hazards. Increasing numbers of handicapped children are also attending camps. Although many of these children attend special camps, most of the regular camps can accommodate, with relatively few adaptations, children with varying disabilities.

Accidents and infectious diseases, the two most common health problems, are a challenge to medical planning for safe and healthy camping. Most camps undoubtedly recognize their responsibility to provide proper facilities, but there seem to be relatively few official guidelines to assist them in achieving this goal.

During the summer of 1963, a survey was undertaken of private summer camps in the State of Vermont to determine (a) medical care facilities and the populations served, (b) medical personnel serving as staff members and

medical requirements for campers, and (c) patterns of medical care. The survey was sponsored by the Vermont State Health Department and the Department of Epidemiology and Community Medicine of the University of Vermont College of Medicine.

Licensed summer camps were selected because of their important role in organized summer camping and the comparatively little information available about their facilities and standards of medical care. Government-sponsored facilities, such as parks and wayside campsites, were excluded because of their more standardized, permanent sanitary facilities and their more transient populations.

Vermont's Regulations

All recreational camps in Vermont require an operating license each year from the State Health Commission. The license is granted after the food and lodging facilities are inspected and found satisfactory; it expires on June 30 (1). No special regulations are designated for recreational camps; rather, they are included with all other public facilities offering food or lodging, or both. Regulations pertaining to medical facilities, health certification, waste disposal, water supplies, foodhandlers, or provisions of medical care are concerned primarily with permanent establishments and medical institutions.

As to violations of the general regulations for public places, Vermont law states: "Whenever upon inspection it is found that the premises are not being conducted in accordance with the provisions of the above named sections, or the regulations adopted in accordance therewith, such commission shall notify the licensee on the conditions found and such changes as are neces-

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sary. If such licensee shall fail within a reasonable time to comply with such orders, the commission shall revoke the license" (1).

The law is carried out in the following manner. Once a year, at the beginning of the summer camping season (June and July), a sanitarian from the Vermont Department of Health visits each camp and points out violations to the camp operators. Reinspection usually follows in several weeks, and the operators are notified of remaining violations by letter. This in turn is followed by still another inspection and warning. Because of the briefness of the camping season and the current system of inspection and notification, it is possible for camps to operate beyond the health regulations for an entire season.

Camping Population

The survey included all the summer camps (116) licensed in Vermont during the 1962 season. According to the Vermont Department of Health, the camper population has increased almost 30 percent during the past 12 years. This percentage excludes Boy Scout jamborees and other transient camping arrangements not licensed by the State. The 116 camps, located throughout the State, had 17,353 campers and approximately 3,300 part-time or full-time staff members. Summer camps were defined as "any camp licensed by the State of Vermont to provide room and board from an organized, central source as a recreational camp."

Sponsorship of the camps consisted of 95 by private, proprietary groups and 21 by the YMCA, the YWCA, scouting groups, 4-H clubs, and other community organizations. The camps were almost equally divided as to kind of population served: coeducational, 36 percent; girls only, 38 percent; and boys only, 26 percent. Most of the camps accept some handicapped children, and a small number are established exclusively for children with special kinds of disabilities, such as blindness and mental retardation.

Survey Methods

The survey was conducted by inspection of the camps and use of two interview forms. The forms were pretested before the survey and then administered by the principal investigator.

Form 1 included description of available medical facilities, first-aid stations, and equipment; camper medical requirements, including medical examination and immunizations; and medical programs and personnel available. This form was completed by the principal investigator at the time of the initial camp visit. The camp director or his designated alternate was interviewed, and health personnel, when available, were also usually interviewed.

Form 2 included a description of the camper and staff population and a complete 7-day sample of medical problems encountered during the season. Although it could not be assumed that the incidence of medical problems was uniform throughout the summer, the 7-day sample provided an indication of the kind of illnesses or injuries confronting the medical personnel during the period. Because the survey was limited in time and personnel, a more detailed study could not be made.

The second form was given to the camp director at the time of the initial interview with instructions concerning its completion. Time and distance precluded return visits to the camps for further information. All the information was processed and coded at the end of the study and then checked by a second observer for completeness and accuracy.

Results

The initial survey interview was conducted at 94 of the 116 camps; 22 camps were closed at the time of the initial visit. The camps unavailable for study did not appear significantly different in size, medical resources, or sponsorship from those studied. Excellent cooperation was obtained from all but one of the camps surveyed. Completed, usable information on form 1 was obtained from 92 camps; additional medical information was returned from 79, or 86 percent, of the 92.

Distribution of camps by number of campers is shown in table 1. Half the camps provided facilities for more than 100 children per camp; only 15 percent of the campers were in camps with smaller populations. There was no appreciable difference in size of camps for boys or girls compared with those which were coeducational.

Table 1. Distribution of licensed summer camps in Vermont by number of campers, 1962

Number campers per camp	Camps		Campers	
	Number	Percent	Number	Percent
0-30.....	7	8	162	1
31-60.....	18	20	803	5
61-100.....	16	17	1,314	9
101-150.....	16	17	2,088	14
151 and over...	35	38	10,785	71
Total.....	92	100	15,152	100

Medical facilities. Medical facilities varied widely, ranging from camps without their own facilities to the larger camps having several infirmaries with overnight care facilities. Generally, the larger camps provided a wider variety of medical quarters more suitable for primary medical care (table 2). Although the smaller camps were able to provide for a larger proportion of campers in the infirmary at one time, they were not as well equipped in terms of facilities and personnel.

Medical personnel. All the camps provided some kind of medical care; the method varied considerably. The majority of camps, 84 of 92, reported having physician services available, but relatively few had resident physicians (14 of 92). Half the resident physicians were still in training and most were not licensed in the State. A third of the nonresident physicians were engaged in busy practices more than 10 miles from the camps. Local hospital resources were even farther away, but posed only occasional transportation problems. Only one camp had no health personnel available, but one-fifth (19 of 92) had no qualified person responsible for the health or first-aid program. Approximately half of the camps (44 of 92) had a nurse.

Medical policies. Assessment of camp medical policies included requirements for medical examination, immunization, recording of information, development of camp instructions on disease detection and management, and provision for emergency services. These standards and policies include most of those designated by the Boy Scouts of America (2).

Medical certification for campers was re-

quired far more frequently than for staff members. Camps sponsored by organizations usually required both campers and staff to submit a completed precamp medical examination certificate from personal physicians; almost half the camps also required a brief screening examination on arrival. No attempt was made to assess the quality of medical examination. The camp medical records usually included precamp medical examinations, immunization information, and other pertinent information.

The contrasting requirements for campers and staff with respect to medical examinations and immunizations are summarized in table 3. The camps which specified immunizations as part of preparation for entering camp were included with those which required immunizations; these usually included the commonly administered school immunizations—poliomyelitis, diphtheria, tetanus, and smallpox (3).

Most camps maintained individual health

Table 2. Distribution of medical facilities in licensed summer camps by number of campers, Vermont 1962

Number campers per camp	First-aid centers		Infirmaries		In-firmary beds per 100 campers
	Number	Percent	Number	Percent	
0-60.....	12	48	15	60	14
61-100.....	13	81	14	82	4
101 and over...	34	62	50	98	4
Total.....	59	64	79	86	6

Table 3. Medical requirements for campers and staff in licensed summer camps, Vermont 1962

Requirements	Campers		Staff	
	Number camps	Percent camps	Number camps	Percent camps
Precamp medical examination.....	84	91	53	56
Camp arrival examination.....	42	45	25	27
Immunizations.....	36	39	19	21

records (84 of 92) and regular procedures for obtaining medical assistance (89 of 92). Also, 47 of the 92 camps prepared staff instructions for prompt recognition of signs and symptoms of disease, and 20 of the 47 specified in detail how to handle medical emergencies. Most of the records and procedures were modifications of well-known national health and safety recommendations (4).

Medical problems. The survey included all medical problems handled by camp medical personnel during a 7-day period. Few studies of summer camp morbidity are available which have comparable information; however, the data obtained from this sample period provide an estimate of the nature and number of medical problems encountered.

Information concerning medical problems was reported by 62 camps with 8,147 resident campers during the study period (table 4); 17 additional camps did not keep formal medical records, and they were excluded from the tabulation.

Accidental injuries comprised two-thirds of the reported problems (1,347 of 2,030); an incidence of 16.5 accidents per 100 campers per week. The remaining third were primarily infectious diseases; an incidence of 8 per 100 campers per week. All but a few of the problems were cared for within the usual medical resources of the camps.

Discussion

The survey revealed wide variation in health supervision and resources in Vermont's licensed summer camps. The variability in health-protection policies and procedures may be a potential threat to the large summer camping populations. The development of summer camps has not been accompanied by corresponding regulations or health guidelines specifically designed to meet their needs. They require more specific and separate regulations rather than the general requirements established for other food and lodging facilities under which camps are usually licensed.

The current system of summer camp inspection in many States is often limited to a simple sanitary code. The camps are given the primary responsibility for establishing all other health and sanitary policies. No printed state-

Table 4. Seven-day sample of medical problems reported by licensed summer camps, Vermont 1962

Problems	Number reported	Camps reporting	
		Number	Percent
<i>Accidents</i>			
Burns.....	58	25	40
Fractures.....	19	11	18
Wounds.....	1, 148	52	84
Other.....	122	17	27
<i>Illness</i>			
Infection.....	658	38	61
Other.....	25	9	15

ment of suggested health and sanitation guidelines is issued by official agencies, although the survey revealed that many camp directors were interested in receiving such information. Such guidelines are particularly important in the further development of the summer camp industry, because its expansion depends in part on the soundness of health and sanitation plans (5). Standardization of sanitary facilities in State and national park systems offers an example of careful planning for health.

The majority of camps included in the survey operated on relatively modest budgets. However, the unpleasant alternatives (hepatitis and other foodborne and waterborne diseases, for example) to sound, continued planning for health and sanitation suggest that the highest financial priority should be given to the health area of camp operation. The absence of medical disasters in camps can hardly be reassuring, since the natural history of many camp epidemics and other health problems is likely to be reflected on the child's home community rather than the summer camp. An example is hepatitis, which has a prolonged incubation period. Variations in supervision and reporting undoubtedly also influence available figures.

Considerable variation in medical facilities and personnel was encountered in the survey. Although more than 80 percent of the camps had infirmary facilities, a significant number had barely adequate medical equipment or medical personnel for these facilities.

No regulations concerning medical facilities or personnel were established for summer camps beyond the limited regular license requirements. The qualifications or availability of designated medical personnel often appeared questionable. Although first aid and regular medical resources were usually available, physicians who did not reside at camp were not always easily accessible to ill or injured campers. Nursing services were more directly established. A ruling permitting nurses to practice without a Vermont license has been enacted for summer camps. In instances where the nurse was primarily responsible for prescription drugs, more physician supervision seemed to be indicated.

Since the primary purpose of professional license is protection of the patients' interests, this might deserve more official attention. Advance planning for all medical needs including designated responsibility of qualified medical staff would appear most important for all camps, particularly those for children with handicapping conditions (6).

Camp medical policies was another area of investigation. The majority of the camps required camper medical examinations and immunizations, but many failed to require such health protection for their staffs. This relative lack of staff health protection increases potential health problems because staff members are not only likely to have more illnesses and health problems, as shown by a previous study (7), but they also have a dual responsibility for the health and welfare of campers and themselves.

A sizable number of camps also failed to keep adequate medical records of any kind. Since medical care programs depend on record systems for statistics and standardization as well as for future planning, this is an area for summer camps to consider improving. The records need not be elaborate, but they should include a minimum of an entrance medical examination statement, current immunization status, and a record of health problems prior to and during the camp stay. Such records provide an invaluable resource for medical continuity with relatively little effort and they are part of the investment in good camping health.

Few summer camp morbidity studies are available with which to compare this survey. While the great majority of medical problems

were managed within the camps' own medical resources, a significant number were disabling or infectious. The rate of accidental injury, for example, was several times higher than observed in other studies of summer camps in neighboring States (7), although possible variability in reporting and prevalence is acknowledged. Further study and assistance in accident prevention might be important for summer camps. Similarly, prevention of infectious diseases might be improved by more use of hospital and public health resources for bacterial culturing and disease control. The susceptibility of the camping population in terms of age and mobility makes these medical considerations more necessary if camps are to assume responsibilities beyond first-aid care for their charges.

Conclusions

Health and sanitary standards for licensed recreational summer camps seem to require more critical attention by both camp directors and responsible agencies such as State and local health departments. At present, regulations and recommendations are not standardized as to the camps' responsibilities in this area.

Guidelines concerning medical and sanitary facilities and health should be included in recommendations, especially those made by State and local health departments, to summer camps. Standards for health protection and the care of ill or injured campers should be encouraged among medical personnel, and an emphasis on accident prevention and personal hygiene should be included as part of the camping code for healthy living. Increased communication between camp personnel and official medical representatives, including public health personnel, should be encouraged.

Planning for safe, healthy camping is essential for the future of summer camps. The cooperation and interest of camp directors and public health officials in the State of Vermont demonstrates the potential for further action to continue raising standards.

REFERENCES

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Medical and Dental X-ray Exposures, 1964

More than 108 million Americans were exposed to medical and dental X-rays in 1964, according to a Public Health Service study. Results showed 92.9 million medical X-ray visits, a rate of 49.8 per 100 persons. A 1961 study, limited to X-ray visits reported in a national household survey, had shown 85.3 million visits, or 47.9 per 100 persons.

The more extensive 1964 survey also revealed that 66.1 million persons received radiographic examinations, 7.8 million persons received fluoroscopic examinations, 45.9 million had dental X-ray examinations, and 600,000 patients received X-ray therapy. Since 11.5 million persons had more than one type of X-ray procedure, elimination of duplication leaves the total of 108 million persons exposed to X-rays during the year.

More than 60 percent of all medical X-ray procedures were made under the supervision of a radiologist. The survey showed that 57.6 percent of the total medical examinations were made in hospital X-ray departments. Another 26.9 percent of the medical examinations were made by radiologists and other physicians in their offices. The remaining 15.5 percent of the procedures were performed at health agencies and other facilities such as industrial clinics. Of the examinations performed in hospitals, 92 percent were in accredited facilities which included an X-ray department supervised by a qualified radiologist.

Examinations of the thoracic area accounted for more than half of the 105 million X-ray examinations experienced by the 66.1 million Americans. One-fourth or 24.7 percent were studies of the abdomen; 17 percent studies of

the extremities; and 7.1 percent, head and neck examinations. Of the 10.5 million fluoroscopic examinations received by 7.8 million Americans, 85 percent were abdominal procedures and most of the remainder were thoracic.

Medical and dental X-ray examinations were received at the highest rate, approximately 75 per 100 persons per year, by white persons between the ages of 15 and 45 years. The rate for nonwhite persons of the same ages was 65 per 100 persons per year. After age 45, the use of medical X-rays tended to increase, but there was a sharp decline in dental X-ray rates in older age groups.

Survey findings indicated few differences between the level of medical X-ray usage for persons with low family incomes and those from more prosperous families. By contrast, the use of dental X-ray examinations showed a steady increase paralleling increases in annual family income.

For medical X-ray visits alone, there was a sharp distinction between urban and farm dwellers. Metropolitan residents averaged about 55 X-ray visits per 100 persons per year, small-town residents showed approximately 43, and farm families about 32.

By geographic area, the West showed a higher rate of medical care in general and of medical and dental X-ray procedures. The annual rates for the western region were 43 per 100 persons for medical and 36 per 100 persons for dental X-rays. The rates for persons in the South were about 37 for medical X-rays and 15 for dental. The Northeast and North Central areas of the country did not show such wide differences.